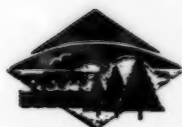


INDUSTRIAL WASTE IDENTIFICATION AND MANAGEMENT OPTIONS



**Environmental Regulatory Services
July, 1996**

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If there is a conflict between this document and the Act or Regulations, then the Act or the Regulations take precedence. It is the responsibility of waste generators to satisfy themselves as to the proper characterization, classification, and management options for their wastes, despite anything in this document.

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INDUSTRIAL WASTE IDENTIFICATION AND MANAGEMENT OPTIONS

PART 1 - BASIS OF THE SYSTEM

1. Objective

The objective of this report is to provide a "handbook type" guide which can be used by Alberta industry in selecting environmentally acceptable and cost effective management options for their wastes. By using Canadian and international waste identification and classification codes it is also hoped that this guide will promote the adoption and use of these codes in Alberta.

2. Uniform Waste Code

This identification system has been developed in order to provide a convenient and consistent industrial waste coding system consistent with Canadian and international standards that can be used to provide information that will assist in assessing management and disposal options.

This Uniform Waste Code consists of four sets of numbers and letters in the following sequence:

WASTE CATEGORY/TDGR PIN/TDGR CLASS/MANAGEMENT CODE

An explanation of the code is given below:

Waste Category

Tables 1 and 3-A, the latter one in Appendix 3, show the waste category in the second column headed by WC, used in some Canadian provinces. For each category a three digit number reflects the general nature of the waste as inorganic, organic, or miscellaneous; its acidic or basic character; its source or the presence/absence of heavy metals, halogens, aromatic organics or specific functional groups.

TDGR Product Identification Number

The United Nations product identification numbers are found in the Transportation of Dangerous Goods Regulations (TDGR), Schedule II, List II, and are used extensively throughout Canada and the rest of the world for movements of dangerous goods and hazardous wastes. They are identified in the third column of the tables under PIN.

TDGR Class

The TDGR class number is used to identify hazards associated with the waste. TDGR designates nine (9) classes for such hazards as toxicity, flammability, reactivity and others. This designation is compatible with Alberta hazardous waste legislation and in the tables in this report is identified in the fourth column under **Class**.

These classes are determined by applying criteria identified in Schedule 1 of the Waste Control Regulation, or by looking in Column III of Schedule II, List II of the Transportation of Dangerous Goods Regulation.

Management Codes

Appendix 1 shows the recommended Basel Convention for treatment/disposal (Section A, D series), or recovery/recycling operations (Section B, R series).

An example applied to a waste is illustrated below with PCB waste going for incineration. For this material the Uniform Waste Code is:

243 / UN2315 / 9.1 / D10.2

Where: **243** is the waste category number for halogenated organic wastes;

UN2315 is the TDGR product identification number for polychlorinated biphenyls;

9.1 is the class of the waste as per Alberta Environmental Protection and Enhancement Act, Waste Control Regulation or Transportation of Dangerous Goods Regulation; and

D10.2 is the modified Basel Convention, Annex IV, Schedule A code for "Incineration on land" presented in Appendix 1, when a destruction and removal efficiency (DRE) of at least 99.9999% is required.

3. Waste Identification & Management Options

The Uniform Waste Code has been applied to a list of industrial wastes generated in Alberta by various sectors of activity (Table 1). In the context of this document industrial waste means waste that is generated by an industrial process or activity including waste generated during the construction, operation or reclamation of an industrial site. Generally, it does not include wastes similar to municipal solid waste, industrial wastewater effluent or gaseous emissions produced in an activity listed in the Schedule, Division 2 of the Activities Designation Regulation,

unless that waste is managed off the site where it is being produced. This table will be updated as waste audits for the industrial sectors, not listed at this time, are conducted by Alberta Environmental Protection. The Code has also been applied to generic industrial waste types (Table 3-A, in Appendix 3) that might be associated with Canadian/Alberta industrial operations.

What follows is an example on how to use Table 1. It has been taken from the electroplating industrial sector presented in page 9.1, and is accompanied by an explanation of the table headings for easier understanding of the information:

9. ELECTROPLATING WASTES

WASTE NAME	WC	PIN	Class	Management
Inorganic wastes				
1 Spent pickle liquor from steel finishing constituted by solutions of sulphuric and hydrochloric acids containing ferrous salts (WT 81)	111	NA9381	8	D9-R7

The table is organized in five columns.

In the first column wastes are identified by the most common name under which they are generally known (Spent pickle liquor ...).

The second column, headed by WC, a three digit number (111) indicates the waste category. In this group of wastes it is the generic designation for an *inorganic acidic waste*. The first digit (1) reflects an inorganic waste. The second (1) tells us that we are dealing with an acid. Finally, the third digit (1) reflects the presence of specific chemical entities and/or the source of the waste.

The third column, under PIN, identifies the United Nations product identification number prescribed by TDGR for shipment of the waste (NA9381).

Column four identifies, under the heading CLASS, the specific waste class as per hazardous waste characteristics according to Alberta Waste Control Regulation and the Transportation of Dangerous Goods Regulation (Class 8, corrosive hazardous waste, pH < 2.0).

Finally, in column five under MANAGEMENT, the disposal and/or recovery codes associated with internationally acceptable waste management practices are identified (D9-R7). In this case chemical-physical treatment consisting of neutralization/precipitation, solid-liquid separation and sludge stabilization (D9), or recovery of the waste for pollution abatement (R7). The meaning of the various management codes is given in Appendix 1.

In this example D9 represents a physico-chemical treatment consisting of neutralization, precipitation, separation, with discharge of the liquid neutral phase to the local sewer system and

stabilization of the sludge resulting from the treatment. R7 refers to the alternative and preferred use of this waste as a pollution abatement agent in controlling hydrogen sulphide at municipal wastewater digesters or other similar applications.

The Uniform Waste Code for the spent pickle liquor is then 111/NA9381/8/D9-R7.

The management practices identified in Table 1 are acceptable to Alberta Environmental Protection. They may be applied on-site, or the waste may be sent to approved facilities located in the Province or elsewhere. Facilities located in Alberta that are approved under EPEA are identified in Appendix 2. It should be noted that hazardous wastes identified as being suitable for secure landfill disposal, denoted as D5, have been assessed taking into consideration the landfill prohibitions in the Waste Control Regulation.

The listed industrial wastes and identified management options are appropriate for the wastes generated within the specific sector as indicated in Table 1. Wastes from other sectors that may be similar but are not identified in this document should be properly assessed to determine their characteristics and adequate management.

It is noted that the tables were developed to include all wastes produced by specific service activities and industrial sectors. Wastes from these sources that have characteristics similar to municipal wastes (eg., cafeteria wastes, office paper, packaging material, etc.) have been excluded from this assessment. However, it is recognized that the lists are not exhaustive. Additional waste streams, and alternative classifications or management options may have to be considered in future revisions of the document and added or dropped as required by real situations.

4. Alberta Capabilities

Appendix 2 identifies companies approved by either Alberta Environmental Protection or the Alberta Energy & Utilities Board (formerly the Energy Resources Conservation Board) to operate facilities for the disposal or recovery of specific industrial and hazardous waste. In addition, the company's waste management capability is identified as per the Uniform Waste Code System.

Companies which operate mobile waste treatment units that require approval from Alberta Environmental Protection are also included in Appendix 2. The listing is included as part of the Alberta waste system to facilitate the task of matching waste characteristics with available management options. However, there may be other companies providing services or facilities which do not require approval by these two agencies but are capable of treating the waste in an acceptable manner. Comprehensive information on Alberta's environmental service providers is available from the Environmental Services Association of Alberta @ 1-800-661-9278.

It should also be noted that the information in Appendix 2 may be incomplete at a particular point in time. If this occurs it should not be seen as an intentional exclusion of a particular facility or capability that may have come on line.

PART 2 - WASTE IDENTIFICATION AND MANAGEMENT OPTIONS

TABLE 1 - INDUSTRY SECTOR WASTES

Explanatory notes to Table 1:

1. Management column:
 - a) D3-D9 means deepwell injection (D3) or physical-chemical treatment (D9), whereas D9-D3 means that physical-chemical treatment should precede disposal by deepwell.
 - b) The listing of a pattern of ascending number management options generally identifies alternative management options, whereas descending numbers imply sequential implementation of the two options identified. Remaining options are identified as possible alternatives for the waste itself or its constituent phases.
 - c) When two disposal options of similar nature are indicated, for example D1-D5, the option to be implemented should be consistent with the hazardous or non-hazardous characteristics of the waste.
2. V stands for variable. Depending on case specific conditions more than one product identification number (PIN) or class may be applicable to the waste identified under that name.
3. NR, under Class, means that the waste is not regulated as hazardous waste and as such not subject to the provisions of Part 9, Division 3 of the Environmental Protection and Enhancement Act and Part 1 of the Waste Control Regulation.
4. Some wastes, for example *Lacquer thinners* on this page, show under the headings PIN, Class, or Management different PINs, classes, or management options. These differences are due to different concentrations of active constituents that impart different hazardous characteristics to the waste.

1. AIRCRAFT MAINTENANCE WASTES

WASTE NAME	WC	PIN	Class	Management
Miscellaneous inorganic wastes and mixed wastes				
1 Residues and wastewater from paint removal using chemical stripping	145	NA9500	9.3	D3-D9
2 Liquid paints, inks, solvents, varnishes, and stains		UN1993	3	R2-R3-D10
3 Solidified paints, pigments, coatings, and varnishes		NA9500 -	9.3 NR	D5-R3 D1-D5-R3
4 Lacquer thinners (gunwash)		UN1993 NA9500	3-9.3 9.3	R2 D3-D9
Inert inorganic wastes				
5 Sump waste from aircraft wash bays	150	-	NR	D9-D1-D5-D8-R7
6 Batteries:	151			
i) Wet batteries filled with acid		UN2794	8	R3-R4-R5
ii) Wet batteries filled with alkali		UN2795	8	R3-R4
iii) Dry batteries containing KOH (Ni-Cd) that require water		UN3028	8	R4-D5
iv) Lithium batteries (liquid cathode)		UN3090-1	9.1	R4-D9-D5

Aircraft Maintenance Wastes (continued)

WASTE NAME	WC	PIN	Class	Management
Organic wastes				
7 Contaminated fuels:	221			
i) Gasoline, jet fuel, kerosene, tank drainage/washings/bottoms, and spill clean-up residues		UN1863	3	R3-D10.1
ii) Fuel oil No. 1, 2, 4, 5, or 6		UN1202	3	R1-R3-D10.1
8 Spent glycol solutions from cooling systems:	222			
i) containing lead or other metals (WT 202)		NA9500	9.3	R3-D3
ii) not containing metals		-	NR	R3-D3-D8
9 Spent deicing solutions and wastewaters	222	-	NR	R3-D3-D8
10 Spent halogenated solvents and residues (dichloromethane wastewater from aircraft paint removal)	241			
		UN1593	6.1-9.3	R2-D3-D9-D10.2
		NA9500	9.3	D3-D9
11 Waste oils, and undrained lube oil filters (WT 201)	252			
i) Spent lubricating oil (WT 201)		NA9500	9.3	R1-R9
ii) Undrained lube oil filters from internal combustion engines (WT 201)		NA9500	9.3	R3-R5-D9-D5
12 Rags, and sorbent materials	274	V	V	R3-D1-D5-D9-D10

NOTE 1 : In addition to the wastes identified above as typical of this sector a number of other wastes such as asbestos, CFCs, PCBs, and pesticides may also be generated by airport operations and aircraft maintenance activities. The appropriate classification and management options for these wastes are identified in Appendix 3.

NOTE 2 : The classification for asbestos is currently under review.

TABLE 1 - INDUSTRY SECTOR WASTES

2. ANALYTICAL LABORATORY WASTES

WASTE NAME	WC	PIN	Class	Management
Inorganic wastes				
1 Solutions of sulphuric, hydrochloric and nitric acids containing copper, nickel, chromium, zinc, cadmium, tin, lead or other heavy metals	112	UN1760	8-9.3	D9-D3
3 Solutions of sulphuric, hydrochloric, hydrofluoric and nitric acids containing sodium, potassium, calcium, magnesium or aluminum	113	UN1760	8	D9-D3
2 Equipment acid washings	113	UN1760	8-9.3	D9-D3
4 Off-specification acids	114	UN1760	8	D9-D3
5 Solutions, sludges and residues containing copper, nickel, chromium, zinc, cadmium, tin, lead or other heavy metals	121	UN1760	8-9.3	D9-D3
6 Equipment alkaline washings	121	UN1760	8	D9-D3
7 Solutions of ammonium, sodium and potassium hydroxides	121	UN1760	8	D9-D3
8 Off-specification alkalis	122	UN1760	8	D9-D3
9 Wastewaters, neutralized solutions, sludges and residues containing heavy metals	131	NA9500	9.3	D3-D9
10 Ion exchange resins regenerant	132	-	NR	D3-D8
11 Water from washing and rinsing, cooling water, water samples, neutralized solutions and sludges containing non-heavy metals	132	V	V	D3-D8
12 Reactive or unstable inorganic chemicals, reagents and by-products	148	V	V	D9-D8

Analytical Laboratory Wastes (continued)

WASTE NAME	WC	PIN	Class	Management
Organic wastes				
13 Non-halogenated aromatic solvents and residues (toluene and xylene)	211	UN1993 NA9500	3-9.3 9.3	R2-D10.1 D3-D9
14 Non-halogenated aliphatic solvents (acetone, isopropyl alcohol, methanol, etc.)	212	UN1993 NA9500	3-9.3 9.3	R2-D10.1 D3-D9
15 Halogenated solvents and residues (carbon tetrachloride, chloroform, freon, methylene chloride, tetrachloroethylene, etc.)	241	NA9302 NA9500	3-6.1-9.3 9.3	R2-D9-D10.2 D3-D9
16 Waste lube oils from vacuum pumps and other equipment	252	NA9500	9.3	R1-R9
17 Waste organic chemicals, reagents and by-products	263	V	V	D10
Miscellaneous wastes				
18 Unused or off-spec inorganic chemicals	148	V	V	D9
19 Laboratory packs	263	V	V	D10-D5
20 Pathological tissue samples	312	UN2814	6.2	D9-D10
21 Biological cultures	312	UN2900	6.2	D9-D10
22 Sample wastes	-	-	NR	D5-D9-D10

NOTE 1 : In addition to the wastes identified above as typical of this sector a number of small quantity extremely diverse wastes such as flammable liquids, solids, and gases; toxic chemicals; radioactive wastes (ores, tracers); spent filters and sorbents; etc., may also be generated by industrial and commercial laboratories. Wastewater from this sector is generated by washing and rinsing operations, cooling water discharge, and chemical reaction product generation. The appropriate classification and management options of these wastes has to be done on a specific basis as it is done with lab packs.

TABLE 1 - INDUSTRY SECTOR WASTES

3. AUTO DEALERSHIP, AUTOBODY SHOP, AND FARM EQUIPMENT REPAIR WASTES

WASTE NAME	WC	PIN	Class	Management
Wastes from the use of paints, lacquers, solvents, pigments and coatings	145			
1 Liquid paints, solvents, varnishes, and stains		UN1993	3-9.3	R2-R3-D10
2 Solidified paints, pigments, coatings, varnishes		-	NR	D1-R3
3 Lacquer thinners (gunwash)		UN1993 NA9500	3-9.3 9.3	R2-D10 D3-D9
Inorganic wastes	150			
4 Sump waste from car wash bays		-	NR	D9-D1-D5-D8
5 Spent batteries:	151			
i) Wet batteries filled with acid		UN2794	8	R3-R4-D9-D5
ii) Wet batteries filled with alkali		UN2795	8	R3-R4-D9-D5
iii) Dry batteries containing KOH (Ni-Cd) that require water		UN3028	8	R4-D5
iv) Lithium batteries (liquid cathode)		UN3090-1	9.1	R4-D5
Organic wastes	221			
6 Contaminated gasoline, kerosene, tank drainage/washings/bottoms, and spill clean-up residues		UN1863	3	R1-R3-D10.1
7 Fuel oil No. 1, 2, 4, 5, or 6		UN1202	3	R1-R3-D10.1
8 Spent glycol solutions from cooling systems:	222			
i) containing lead or other metals (WT 202)		NA9500	9.3	R3-D3
ii) not containing metals		-	NR	R3-D3-D8
9 Spent lubricating oil (WT 201)	252	NA9500	9.3	R1-R9
10 Undrained lube oil filters from internal combustion engines (WT 201)	252	NA9500	9.3	R3-R5-D5-D9

Auto Dealership, Autobody Shop, and Farm Equipment Repair Wastes (continued)

WASTE NAME	WC	PIN	Class	Management
11 Lead-based greases and greases containing trichloroethane	263	NA9500	9.3	R3-D10
Miscellaneous wastes				
12 Rags, sorbent pads and materials	274	V	V	R3-D1-D5-D9-D10

NOTE : The classification for oily rags is currently under review.

TABLE 1 - INDUSTRY SECTOR WASTES

4. CHEMICAL PLANT WASTES

WASTE NAME	WC	PIN	Class	Management
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List to be developed.

100

TABLE 1 - INDUSTRY SECTOR WASTES

5. COAL MINE WASTES

WASTE NAME	WC	PIN	Class	Management
Inorganic wastes				
1 Sump waste from equipment wash bays	150	-	NR	D9-D1-D5-D8
2 Spent batteries:	151			
i) Wet batteries filled with acid		UN2794	8	R3-R4-D9-D5
ii) Wet batteries filled with alkali		UN2795	8	R3-R4-D9-D5
iii) Dry batteries containing KOH (Ni-Cd) that require water		UN3028	8	R4-D5
iv) Lithium batteries (liquid cathode)		UN3090-1	9.1	R4-D5
Organic Wastes				
3 Non-halogenated aromatic solvents and residues (toluene and xylene)	211	UN1993 NA9500	3-9.3 9.3	R2-D10.1 D3-D9
4 Non-halogenated aliphatic solvents (acetone, isopropyl alcohol, methanol, etc.)	212	UN1993	3-9.3	R2-D10.1
5 Spent glycol solutions from cooling systems:	222			
i) containing lead or other metals (WT 202)		NA9500	9.3	R3-D3
ii) not containing metals		- NA9500	NR 9.3	R3-D3-D8 D3-D9
6 Halogenated solvents and residues (carbon tetrachloride, chloroform, freon, methylene chloride, tetrachloroethylene, etc.)	241	NA9302	3-6.1-9.3	R2-D9-D10.2
7 Spent solvents	241	NA9302	3-6.1-9.3 9.3	R2-D10.2 D9-D3
8 Waste oils, and undrained lube oil filters (WT 201)	252	NA9500	9.3	R1-R9-D9-D1
9 Lead-based greases and greases containing trichloroethane	263	NA9500	9.3	R3-D10
Miscellaneous Wastes				
10 Empty packages, bags, drums and containers	152	V	V/NR	R3-R4-D1-D5
11 Rags, sorbent pads and materials	274	V	V	R3-D1-D5-D9-D10
12 Lab reagents such as acetone and toluene (lab pack)	277	V	V	D10.1

NOTE 1 : In addition to the waste streams identified above, a number of other small quantities of wastes such as paint leftovers, etc., are also generated by this industrial sector. The appropriate classification and management options of these wastes may have been identified under the industry sector related to the auto industry.

NOTE 2 : The classification for oily rags is currently under review.

TABLE 1 - INDUSTRY SECTOR WASTES

6. CONSTRUCTION INDUSTRY WASTES

WASTE NAME	WC	PIN	Class	Management
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List to be developed.

TABLE 1 - INDUSTRY SECTOR WASTES

7. CONSTRUCTION PRODUCTS PLANT WASTES

WASTE NAME	WC	PIN	Class	Management
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List to be developed.

TABLE 1 - INDUSTRY SECTOR WASTES

8. DRYCLEANING WASTES

WASTE NAME	WC	PIN	Class	Management
Organic wastes	241			
1 Drycleaning still bottoms (WT 2)		NA9302	6.1	R2-D10.2
2 Separator water from drycleaning stills and sparging units		NA9500	9.3	D3-D9-D10.2
Miscellaneous Waste	256			
3 Drycleaning filter cartridges and filtering media including carbon and diatomaceous earth (WT 200)		NA9500	9.3	D9-R2
4 Drycleaning lint (WT 200)		NA9500	9.3	D9-R2
5 Drycleaning steam-stripped filter cartridges and filtering media		-	NR	D1-R3

NOTE 1 : Treatability studies conducted by the drycleaning industry and confirmed by Alberta Environmental Protection have demonstrated that steam-stripping spent filters using a minimum steam pressure of 275.8 kPa (40 psi) for at least eight hours constitutes an acceptable industry practice for purposes of exempting this specific waste in accordance with clause 3(h) of the Waste Control Regulation.

TABLE 1 - INDUSTRY SECTOR WASTES

9. ELECTROPLATING WASTES

WASTE NAME	WC	PIN	Class	Management
Inorganic wastes				
1 Spent pickle liquor from steel finishing constituted by solutions of sulphuric and hydrochloric acids containing ferrous salts (WT 81)	111	NA9381	8	D9-R7
2 Chromium wastes:	112			
i) acid solutions		UN1755	8-9.3	D9-D3
ii) sludges and filtercakes (WT 7)		NA9307	9.3	D9-D5
3 Alkaline cleaning solutions, sludges and residues containing heavy metals including cyanide-based plating baths	121	UN1760	8-9.3	D9
4 Ion exchange dewatered sludge	131	UN1759	9.3	D9-D5
5 Neutralized wastewaters, rinse sprays and sludges containing heavy metals	131	NA9500	9.3	D9-D3
6 Nickel or chromium carbon filter cake	131	NA9500	9.3	D9
7 Rinse water, sludges, floor sumps & debris	131	NA9500	9.3	D9-D3
8 Zinc ashes from zinc galvanizing	146	UN1435	4.3	D9-R4
Organic and miscellaneous wastes				
9 Spent solvents/residues from degreasing (trichloroethylene, 1,1,1-trichloroethane, tetrachloroethylene, methylene chloride, trichlorotrifluoroethane, etc.) (WT 2)	241	NA9302	3-6.1-9.3	R2-D10.2
10 Spent paint stripper sludge	271	UN1993	3-9.3	R2-D9-D10

NOTE 1: Spent pickle liquor and zinc ashes shipped off an electroplating plant site for use as a pollution abatement agent in waste water treatment plants or as feedstock in zinc smelters and cosmetic industry, respectively, are not considered hazardous wastes but rather commodities.

NOTE 2: In addition to the waste streams identified above as typical of this industrial sector a number of small quantities of wastes such as oily rags, sorbents, spent batteries, used oils, spent solvents, paint leftovers, etc., are also generated by this industrial sector. The appropriate classification and management options of these wastes may have been identified under the industry sector related to the auto industry.

NOTE 3: The classification for oily rags is currently under review.

TABLE 1 - INDUSTRY SECTOR WASTES

10. FERTILIZER PLANT WASTES

WASTE NAME	WC	PIN	Class	Management
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List to be developed.

TABLE 1 - INDUSTRY SECTOR WASTES

11. FOUNDRY WASTES

WASTE NAME	WC	PIN	Class	Management
1 Spent shot blasting waste resulting from the removal of paint from metal surfaces(WT 205)	145	NA9500	9.3	R4-R5-D5-D9
2 Foundry dust from air pollution control equipment (cyclones, baghouses, ESPs, etc.) from grinding rooms, furnaces, shotblast wheelabrators, sand reclaimers, etc.	146	NA9500	NR or 9.3	R4-D1-D5-D9
3 Foundry moulding sand	146	NA9500	NR or 9.3	R5-D5
4 Foundry slag	146	-	NR	R4
5 Foundry spent refractory	146	-	NR	R5

NOTE 1: An Alberta Environmental Protection waste audit on foundry baghouse dust has found that in most cases this waste would not be considered hazardous. However, given the variability of the materials used as feedstock by this industrial sector, it is recommended that this waste stream should be characterized for leachable heavy metals. The test should be repeated whenever there is a change of the type and nature of metal scrap used as source of raw material.

NOTE 2: In addition to the waste streams identified above as typical of this industrial sector a number of small quantity waste streams such as oily rags, greases, sorbents, etc., may also be generated by this industrial sector. The appropriate classification and management options of these wastes may have been identified under the industry sector related to the auto industry.

NOTE 3: The classification for oily rags is currently under review.

TABLE 1 - INDUSTRY SECTOR WASTES

12. OIL SANDS WASTES

WASTE NAME	WC	PIN	Class	Management
Inorganic wastes				
1 Acid/alkali solutions and washings	122	UN1760	8	D9-D4
2 Lime sludges and slurries from process water treatment	122	-	NR	D1-D4-R7-R10
3 Scale removal solutions	131	NA9500	9.3	D3-D9-D4
4 Ion exchange regeneration rinse water	131	-	NR	D3-D4-D8
5 Reverse osmosis water treatment plant reject water	131	-	NR	D3-D4-D8
6 Boiler water blowdown	136	-	NR	D3-D4
7 Ion exchange resins	136	-	NR	D5
8 Contaminated debris and soil from spills, accidents, and leaks containing:	138			
i) Mercury and other heavy metals		NA9500	9.3	D9-D5
ii) Sulphur		-	NR	D9-D2-D5
iii) Scrap metal		-	NR	D9-R4
9 Pressurized aerosol containers	145	UN1950	2	D9-R4-D1-D5-D10
10 Fly ash petroleum coke fired boilers	146	-	NR	R7-R10-D1-D5
11 Asbestos	150	UN2212	NR	D9-D1-D5-D8
12 Spent batteries:	151			
i) Wet batteries filled with acid		UN2794	8	R4-D9-D5
ii) Wet batteries filled with alkali		UN2795	8	R4-D9-D5
iii) Dry batteries containing KOH (Ni-Cd)		UN3028	8	R4-D5
iv) Lithium batteries		UN3090	9.1	R4-D9-D5
13 Spent catalysts	153			
i) Nickel reformer (hydrogen plant)		NA9500	9.3	R8-D5
ii) Cu/Zn high temperature shift (hydrogen plant)		NA9500	9.3	R8-D5
iii) Cr/Fe low temperature shift (hydrogen plant)		NA9500	9.3	R8-D5
ii) Ni/Mo/Co hydrotreating		UN3088	4.2-9.3	R8-D5
v) Claus catalyst sulphur plant		-	NR	R8-D5

OIL SANDS WASTES (continued)

WASTE NAME	WC	PIN	Class	Management
Inorganic wastes (continued)				
14 Desiccants including silica gel, activated alumina and molecular sieve	154	-	NR	R5-D1-D5
Organic wastes				
15 Spent solvents and solvent residues:				
i) non-halogenated aromatic residues (toluene and xylene)	211	UN1993 NA9500	3-9.3 9.3	R2-D10.1 D3-D9
ii) non-halogenated aliphatic solvents (acetone, isopropyl alcohol, methanol, etc)	212	UN1993 NA9500	3-9.3 9.3	R2-D10.1 D3-D9
iii) halogenated solvents and residues (carbon tetrachloride, chloroform, freon, methylene chloride, tetrachloroethylene, etc.)	241	NA9302	3-6.1-9.3	R2-D9-D10.2
16 Contaminated gasoline and naphtha	221	UN1863	3	R1-R3-D10.1
17 Hydrocarbon storage tank bottoms	251	-	3-NR	R1-R3-D2-D10.1
18 Slop oil emulsion solids (WT 75)	251	NA9375	6.1	R1-R3-D2-D10.1
19 Heat exchanger bundle cleaning sludge (WT 76)	251	NA0370	6.1-8	D9-D5
20 API separator sludge (WT 77)	251	NA9377	3.1	R1-R3-D2-D10.1
21 Waste oils and undrained lube oil filters:	252			
i) Spent lubricating oil (WT 201)		NA9500	9.3	R1-R9
ii) Used hydraulic and transmission oil		-	NR	R1-R9
iii) Undrained lube oil filters from internal combustion engines (WT 201)		NA9500	9.3	D9-R3-R5-D5
22 Spent glycol solutions from cooling systems:	273			
i) Containing lead (WT 202)		NA9500	9.3	R3-D3
ii) Not containing lead		-	NR	R3-D3-D8
Miscellaneous organic wastes				
23 Waste paint and painted related material such as paint leftovers, obsolete or off-spec paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler, liquid lacquer base, paint thinners, solvents and paint reducing compounds	223	UN1263	3	R2-R3-D9-D10-D1-D5
24 Spent filtering media (cellulose and activated carbon)	261			
i) With leachable toxics		NA9500	9.3	R1-R3-D5-D9-D10
ii) Without leachable toxics		-	NR	R1-R3-R7-D1-D5-D9-D10.1
iii) Lead dioxide contaminated paper filters		NA9500	9.3	D9-D5

OIL SANDS WASTES (continued)

WASTE NAME	WC	PIN	Class	Management
25 Waste organic chemicals including laboratory or off-spec chemicals (lab packs)	263	V	V	D10-D5
26 Waste carbon disulphide	271	UN1131	3-6.1	D3-D10.1
27 Spent sweetening agents used in gas desulphurization:	277			
i) Iron sponge		UN1376	4.2	D9-D2-D5
ii) Solid phase of other sweetening agents such as Cansweet 200, 300, 300SX, 500, Sulphatreat, Sulphacheck, and Sulpha-Scrub		-	NR	D9-D2-D5
iii) Liquid phase sweetening agents		-	NR	D9-D3-D4

NOTE 1 : In addition to the waste streams identified above, oily rags, sorbents, spent photographic solutions, etc., may also be generated by oil sands mining and processing. The appropriate classification and management have been identified under other industry sectors where these wastes are more relevant. See the industry sectors related to the auto industry and photoprocessing.

NOTE 2 : The classification for oily rags is currently under review.

TABLE 1 - INDUSTRY SECTOR WASTES

13. PAINT REMOVAL WASTES

WASTE NAME	WC	PIN	Class	Management
Mixed wastes				
1 Pressurized aerosol containers	145	UN1950	V	D9-R4-D1-D5-D10
2 Empty and punctured aerosol cans, bags, and containers	145	-	NR	R3-R4-D1-D5
3 Lead-based paint chips, sludge and residues resulting from stripping, sanding or scraping of painted surfaces	145	NA9500	9.3	D9-D10
4 Paint spray booth filters and sludges, scum from water curtain and wastewaters	145	NA9500	9.3	D9-D10
5 Paint, pigment and abrasive dusts from air pollution control equipment	145	NA9500	9.3	D9-D1-D5-D10
6 Paint filter bags and cartridges		-	NR	D1-D5
7 Scrubber wastewater from cleaning blasting dust	145	NA9500	9.3	D9-D3
8 Solidified paint, pigment, coating, varnish	145	-	NR	R1-R3-D1-D5
9 Spent shot blasting waste resulting from the removal of paint from metal surfaces (WT 205)	145	NA9500	9.3	R4-R5-D5-D9
10 Water jet or compression blasting wastewater resulting from the removal of paint from metal surfaces	145	NA9500	9.3	D9-D5-R4-R5
11 Powder and dust from air pollution control equipment (air separators, baghouse, etc.)	146	NA9500	NR or 9.3	R4-D1-D5-D9-D10
Organic wastes				
12 Leftovers, obsolete or off-spec paint, lacquer, enamel, stain shellac, varnish, polish, liquid filler, liquid lacquer base, paint thinners, solvents and paint reducing compounds	223	UN1263	3	R2-R3-D9-D10
13 Organic solvent based paints and stains	223	UN1263	3	R2-R3-D9-D10

Paint Removal Wastes (continued)

WASTE NAME	WC	PIN	Class	Management
Organic wastes (continued)				
14 Residues from paint removal using chemical stripping	223	NA9500	9.3	D9-D10-D3
15 Spent shot blasting waste resulting from the removal of paint containing PCBs	243	UN2315	9.1	D9-D10.2

NOTE 1 : In addition to the waste streams identified above as typical of this industrial sector a number of small quantities of wastes such as oily rags, greases, sorbents, etc., may be also generated by this industrial sector. The appropriate classification and management options of these wastes may have been identified under the industry sector related to the auto industry.

NOTE 2 : The classification for oily rags is currently under review.

TABLE 1 - INDUSTRY SECTOR WASTES

14. PETROLEUM PRODUCTS MARKETING FACILITY WASTES

WASTE NAME	WC	PIN	Class	Management
Inorganic wastes				
1 Spent batteries:	151			
i) Wet batteries filled with acid		UN2794	8	R4-D9-D5
ii) Wet batteries filled with alkali		UN2795	8	R4-D9-D5
iii) Dry batteries containing KOH (Ni-Cd)		UN3028	8	R4-D5
iv) Lithium batteries		UN3090	9.1	R4-D9-D5
Organic wastes				
2 Leaded, unleaded, and aviation gasoline tank bottoms	221	UN1203	3.1-9.3	R1-R3-D10.1
3 Gasoline washings, and spill clean-up residues		UN1203	3	R1-R3-D10.1
5 Bunker and diesel fuel (fuel oils No. 1, 2, 4, 5, or 6)		UN1202	3	R3-D10.1
6 Furnace/Stove and lube oils		-	-	R1-R3-D10.1
7 Jet fuels A and B		UN1863	3	R3-D10.1
8 MTBE additive		UN2398	3	R3-D10.1
9 Water ballast		-	-	D3-D8
10 Waste lube oils and undrained lube oil filters (WT 201)	252			
i) Spent lubricating oil (WT 201)		NA9500	9.3	R1-R9
ii) Used hydraulic and transmission oil		-	NR	R1-R9
ii) Undrained lube oil filters from internal combustion engines (WT 201)		NA9500	9.3	R3-R5-D9-D5
11 Used brake fluids		-	-	R1-R9-D10.1
12 Spent glycol solutions from:				
i) Cooling systems containing lead (WT 202)		NA9434	9.3	R3-D3-D8
ii) Solutions not containing lead		-	NR	R3-D3-D8

Petroleum Products Marketing Facility Wastes (continued)

WASTE NAME	WC	PIN	Class	Management
Miscellaneous wastes				
16 Truck/Car wash sumps	150	-	-	D9-D3-D1-D5
17 Used brake shoes	151	UN2212	NR	D9-D1-D5-D8
18 Oily water separator sludge	251	V	V	D9-R3-D2-D5.D10.1
19 Rags, sorbent materials, and hydrocarbon contaminated soils	274	V	V	R3-D1-D5-D9-D10.1
20 Filter cake, and waste clay from filters	275	NA9500	9.3	D9-D1-D5

NOTE 1 : In addition to the waste streams identified above as typical of this industrial sector a number of small quantity wastes such as oily rags, greases, sorbents, spent batteries, used oils, spent solvents, paint leftovers, etc., are also generated by this industrial sector. The appropriate classification and management options of these wastes may have been identified under the industry sector related to the auto industry.

NOTE 2 : The classification for oily rags is currently under review.

TABLE 1 - INDUSTRY SECTOR WASTES**15. PHOTOPROCESSING WASTES**

WASTE NAME	WC	PIN	Class	Management
1. Spent starter solutions	121	UN1760	8-9.3	D9-D3-D8
2. Spent finisher solutions	131	NA9500	9.3	D3-D8
3. Spent activated carbon with leachable toxics produced by recycling process	261	NA9500	9.3	R1-R3-R7-D5-D10
4. Spent laboratory reagents	264	NA9500	9.3	D3-D8
5. Spent bleach, bleach fixer (Ag), and ammonium thiosulphate fixer	264	NA9500	9.3	R4-D3-D8
6. Spent developer	264	-	NR	D3-D8
7. Reducing solutions	264	-	NR	D3-D8
8. Stabilizer solutions (Ag, NO ₃ +NO ₂ , NTA)	264	NA9500	9.3	R4-D3-D8
9. Wash water	-	-	NR	D3-D8

TABLE 1 - INDUSTRY SECTOR WASTES

16. POWER PLANT WASTES

WASTE NAME	WC	PIN	Class	Management
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List to be developed.

TABLE 1 - INDUSTRY SECTOR WASTES

17. PULP MILL WASTES

WASTE NAME	WC	PIN	Class	Management
Inorganic wastes				
1 Spent sulphuric and chromic acids	111	UN1830	8	D9
2 Spent sodium hydroxide	122	UN1760	8	D9
3 Lime, lime sludges (calcium oxide, hydroxide, or carbonate), and lime slaker grids	122	-	NR	R7-R10-D1-D5
4 Alum sludges	132	-	NR	D9-R5-D5
5 Mercury contaminated debris or soils from spills, leaks or accidents	138	NA9500	9.3	D9-D5
6 Pressurized aerosol containers	145	UN1950	2	D9-R4-D1-D5-D10
7 Fly and bottom ash from wood waste and dehydrated pulp sludges used in power boilers, burners, and incinerators	146	-	NR	R7-R10-D1-D5
8 Asbestos	150	UN2212	NR	D9-D1-D5-D8
9 Sump waste from car or equipment wash bays	150	-	NR	D9-D1-D5-D8
10 Spent batteries:	151			
i) Wet batteries filled with acid		UN2794	8	R4-D9-D5
ii) Wet batteries filled with alkali		UN2795	8	R4-D9-D5
iii) Dry batteries containing KOH (Ni-Cd)		UN3028	8	R4-D5
iv) Lithium batteries		UN3090	9.1	R4-D9-D5
Organic wastes				
11 Spent solvents and solvent residues:				
i) Non-halogenated aromatic residues (toluene and xylene)	211	UN1993 NA9500	3-9.3 9.3	R2-D10.1 D3-D9
ii) Non-halogenated aliphatic solvents (acetone, isopropyl alcohol, methanol, etc)	212	UN1993 NA9500	3-9.3 9.3	R2-D10.1 D3-D9
iii) Halogenated solvents and residues (carbon tetrachloride, chloroform, freon, methylene chloride, tetrachloroethylene, etc.)	241	NA9302	3-6.1-9.3	R2-D9-D10.2
12 Spent glycol solutions from cooling systems:	222			
i) Containing lead (WT 202)		NA9500	9.3	R3-D3
ii) Not containing lead		-	NR	R3-D3-D8

Pulp Mill Wastes (continued)

WASTE NAME	WC	PIN	Class	Management
Organic wastes (continued)				
13 Waste paint and paint related material such as leftovers, obsolete or off-spec paint, lacquer, enamel, stain shellac, varnish, polish, liquid filler, liquid lacquer base, paint thinners, solvents and paint reducing compounds	223	UN1263	3	R2-R3-D9-D10-D1-D5
14 Polychlorinated biphenyls	243			
i) Askarel liquids such as Aroclor, Pydraul, Pyranol, Therminols, Inerteen, and other PCB containing liquids		UN2315	9.1	D9-D10.2
ii) PCBs contaminated solids (PCBs $\geq$ 1000 ppm)		UN2315	9.1	D9-D10.2
iii) PCB contaminated solids (PCBs $\geq$ 50 ppm and PCBs $\leq$ 1000 ppm)		UN2315	9.1	D5-D9-D10.2
iv) Fluorescent light PCB ballasts		UN2315	9.1	D9-D10.2
15 Waste lube oils and undrained lube oil filters (WT 201)	252			
i) Spent lubricating oil (WT 201)		NA9500	9.3	R1-R9
ii) Used hydraulic and transmission oil		-	NR	R1-R9
ii) Undrained lube oil filters from internal combustion engines (WT 201)		NA9500	9.3	R3-R5-D9-D5
16 Used greases containing:	263			
i) With leachable toxics (lead, trichloro-ethane, etc.)		NA9500	9.3	R3-D10
ii) Without leachable toxics		-	NR	R3-R1-D1-D5
17 Sludges and sediments from biological treatment, aeration stabilization basins (ASB), aeration settling tanks (AST), and primary/secondary clarifiers	270	-	NR	R10-R1-D9-D5
18 Green liquor dregs, knots and screen rejects, wood waste, woodyard debris, and reclaimer fines	271	-	NR	R1-R10-D1
19 Activated carbon:	271			
(i) With leachable toxics		NA9500	9.3	R1-R3-R7-D5-D9-D10
(ii) Without leachable toxics		-	NR	R1-R7-D1-D5-D10

NOTE 1 : In addition to the waste streams identified above as typical of this industrial sector a number of small quantities of other wastes such as spent filters, contaminated fuels, toners, defoamers, oily rags and sorbents, etc., are also generated by this industrial sector. To classify and manage some of these wastes specific assessments may be required or by reference to data from other industrial sectors.

NOTE 2 : The classification for oily rags is currently under review.

TABLE 1 - INDUSTRY SECTOR WASTES

18. RADIATOR REPAIR WASTES

WASTE NAME	WC	PIN	Class	Management
1 Spent caustic solutions and residues from the cleaning heat exchangers which were fabricated using an alloy containing lead as an adhesive (WT 203)	121	NA9500	9.3-8	D9
2 Radiator alkaline washing solutions (WT 203)	122	NA9500	9.3-8	D9
3 Spent shot blasting waste resulting from the removal of paint from metal surfaces(WT 205)	145	NA9500	9.3	R5-D5-D9
4 Glycol solutions from cooling systems:	272			
i) Containing lead (WT 202)		NA9500	9.3	R3-D3
ii) Not containing lead		-	NR	R3-D3-D8

NOTE 1 : In addition to the waste streams identified above as typical of this industrial sector a number of small quantities of wastes such as oily rags, sorbents, spent solvents, paint leftovers, etc., may also be generated by this industrial sector. The appropriate classification and management options of these wastes may have been identified under the industry sector related to the auto industry.

NOTE 2 : The classification for oily rags is currently under review.

TABLE 1 - INDUSTRY SECTOR WASTES

19. RAILCAR REPAIR WASTES

WASTE NAME	WC	PIN	Class	Management
Mixed Wastes				
1 Paint sludges, residues, and scum from water curtains and rail car washing bays	145	NA9500	9.3	D9-R1-D10
2 Spent shot blasting waste resulting from the removal of paint from metal surfaces(WT 205)	145	NA9500	9.3	R4-R5-D5-D9
3 Grit, powder and dust from air pollution control equipment (air separators, baghouse)	146	NA9500	NR or 9.3	R4-D1-D5-D9
4 Still bottoms halogenated residues	241	NA9302	3-6-9.3	R2-D9-D10
5 Spent shot blasting waste resulting from removal of paint containing PCBs	243	UN2315	9.1	D9-D10.2

NOTE 1 : In addition to the waste streams identified above as typical of this industrial sector a number of small quantities of wastes such as oily rags, sorbents, spent solvents, paint leftovers, etc., may also be generated by this industrial sector. The appropriate classification and management options of these wastes may have been identified under the industry sector related to the auto industry.

NOTE 2 : The classification for oily rags is currently under review.

TABLE 1 - INDUSTRY SECTOR WASTES

20. REFINERY WASTES

WASTE NAME	WC	PIN	Class	Management
Inorganic wastes				
1 Spent acids, acid solutions and washings	114	UN1760	8	D9-D3
2 Sulphuric acid drum sludge	114	UN1760	8	D9-D3
3 Spent caustics, alkali solutions and washings	122	UN1760	8	D9-D3
4 Caustic sour process wastewater	121	UN1760	8-9.3	D9-D3
5 Lime sludges and slurries from process water treatment	122	-	NR	D1-R5-R7-R10
6 Neutral solutions:				
i) Corrosion inhibitor	131	NA9500	9.3	D3-D9
ii) Cooling water system blowdown				
iii) Ion exchange resins regenerant		-	NR	D3
7 Spent ion exchange resins	133	-	NR	D1-D5
8 Salt drier gravel	133	-	NR	D1-D5
9 Salt drier salt	133	-	NR	D9-D3
10 Ammonium polysulphide	134	UN2818	8-6.1	D3-D9-D2
11 Boiler blowdown water	136	-	NR	D3
12 Cooling tower system blowdown	136	NA9500	9.3	D3
13 Contaminated heat transfer fluids	136	-	-	D9-D3
14 Waste inorganic chemicals including laboratory or off-spec chemicals (lab packs)	148	V	V	R5-D9-D5
15 Solid residues:	150			
i) Asbestos		UN2212	NR	D9-D1-D5-D8
ii) Furnace refractory		-	NR	R5-D1-D5
iii) Ceramic support material		-	NR	R5-D1-D5
iv) Sandfilter sand		-	NR	D2-D5
v) Presettling pond sludge		-	NR	D2-D9-D5
vi) Catch basin sludge				

Refinery Wastes (continued)

WASTE NAME	WC	PIN	Class	Management
Inorganic wastes (continued)				
16 Sump waste from equipment wash bays	150	-	NR	D9-D1-D5-D8
17 Spent batteries:	151			
i) Wet batteries filled with acid		UN2794	8	R4-D9-D5
ii) Wet batteries filled with alkali		UN2795	8	R4-D9-D5
iii) Dry batteries containing KOH (Ni-Cd)		UN3028	8	R4-D5
iv) Lithium batteries		UN3090	9.1	R4-D9-D5
18 Spent catalysts	153			
i) Cobalt-Molybdenum		NA9500	9.3	R8-D5
ii) Nickel-Molybdenum		NA9500	9.3	R8-D5
iii) Fluidized cracking		-	NR	R5-D1-D5
iv) Alumina		-	NR	R5-D1-D5
v) Platinum		-	NR	R5-R4
19 Desiccants including silica gel, activated alumina and molecular sieves	154	-	NR	R5-D1-D5
Organic wastes				
20 Spent methanol	212	UN1230	3-6.1	R2-D10.1
21 Gasoline tank bottoms	221	UN1203	3	R1-D10.1
22 Perchloroethylene	241	UN1847	6.2	R2-D10.2
23 Polychlorinated biphenyls (PCB containing electrical switches)	243	UN2315	9.1	D9-D10.2
24 Dissolved air flotation (DAF) froth (WT 74)	251	NA9374	3.1	R1-R3-D2-D10.1
25 Slop oil emulsion solids (WT 75)	251	NA9375	6.1	R1-R3-D2-D10.1
26 Leaded tank bottoms (WT 78)	251	NA9378	9.3	D9-D8-D10.1
27 Unleaded tank bottoms and sludges	251	NA9500	9.3	D2-D9-D10.1
28 Sludges from:	251			
i) API separator (WT 77)		NA9377	3.1	R1-R3-D2-D9-D10.1
ii) Fuel gas drum		UN1993	3	R1-D2-D9-D10.1
ii) Leaded tank bottoms (WT 78)		NA9378	9.3	D9-D8-D9-D10.1
iii) Unleaded tank bottoms and sludges		NA9500	9.3	D2-D9-D10.1
iv) Trays		NA9500	9.3	D9-D10.1
v) Waste treatment pit		NA9500	9.3	D2-D9-D10.1
vi) Settling lagoon sludge		NA9500	9.3	D2-D9-D10.1
v) Acid sludge from used oil refineries		NA9500	9.3-8	D9-D10.1
vi) Septic tank		-	NR	D2-D8

Refinery Wastes (continued)

WASTE NAME	WC	PIN	Class	Management
Organic wastes (continued)				
29 Asphalt, coke and waxes	251	-	NR	R1-D1-D5
30 Waste oils and undrained lube oil filters:	252			
i) Spent lubricating oil (WT 201)		NA9500	9.3	R1-R9
ii) Used hydraulic and transmission oil		-	NR	R1-R9
iii) Undrained lube oil filters from internal combustion engines (WT 201)		NA9500	9.3	D9-R3-R5-D5
31 Waste organic chemicals including laboratory or off-spec chemicals (lab packs)	263	V	V	R3-D10-D5
32 Contaminated monoethanolamine (MEA)	268	UN2491	8	D8
33 Waste dye with hydrocarbons	270	-	-	D9-D2-D8
34 Spent glycol solutions from cooling systems:	273			
i) Containing lead (WT 202)		NA9500	9.3	R3-D3-D8
ii) Not containing lead		-	NR	R3-D3-D8
35 Chemically treated wood including cooling tower wood	275	-	NR	R3-D1-D5
Miscellaneous wastes				
36 Pressurized aerosol cans	145	UN1950	2	D9-R4-D1-D5-D10
37 Clay treater (gravel & clay)	251	NA9500	9.3	D9-D2
38 Spent stainless steel Rashing rings covered with coke	251	-	NR	R4-D1-D5
39 Furnace decoking solids	251	-	NR	R3-D1-D5
40 Filters from:	256			
i) Air pollution control		V	V	D5-D9-D10.1
ii) Oil and gas purification and dehydration using amines or glycol		UN3088	4.2	D9-D5-D10.1
iii) Purification of gasoline		UN1325	4.1	D5-D9-D10.1
ii) Fuel gas, NGLs, and propane purification		UN1325	4.1	D5-D9-D10.1
41 Filters or filtering media from water treatment	257	-	NR	R5-R1-D1-D5
42 Activated carbon and charcoal:	261			
(i) With leachable toxics		NA9500	9.3	R1-R3-R7-D5-D10
(ii) Without leachable toxics		-	NR	R1-R7-D1-D5-D10

43 Waste organic chemicals including laboratory or off-spec chemicals (lab packs)	263	V	V	R3-D10-D5
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Refinery Wastes (continued)

WASTE NAME	WC	PIN	Class	Management
44 Coalescer sand with hydrocarbons	272	V	V	D9-D2-D5
45 Filter cake/activated clay	274	NA9500	9.3	D9-D1-D5
46 Spent sorbents and oily rags	274	V	V	R3-D1-D5-D9-D10
47 Contaminated debris and soil from spills, accidents, and leaks containing:	275			
i) Low molecular weight hydrocarbons		UN1325	4.1	D9-D2
ii) High molecular weight hydrocarbons		-	NR	D2-D10
iii) Sulphur		-	NR	D9-D2-D5
iv) Mercury and other heavy metals		NA9500	9.3	D9
48 Construction & demolition material, scrap metal, wood and other debris	275	-	NR	R4-R5-D1-D5
49 Cooling tower basin sludge	276	NA9500	9.3	D9-D3-D5
50 Spontaneously combustible substances	277			
i) Spent iron sponge and other iron-based sweetening agents (iron sulfides)		UN1376	4.2	D9-D2-D5
ii) Spent zinc oxide and support balls		UN1376	4.2	D9-D2-D5
51 Compressed gases including propane cylinders	331	UN1954	2.1	D10-R4

NOTE 1 : In addition to the waste streams identified above as typical of this industrial sector a number of small quantities of wastes such as oily rags, sorbents, spent solvents, paint leftovers, etc., are also generated by this industrial sector. The appropriate classification and management options of these wastes may have been identified under the industry sector related to the auto industry.

NOTE 2 : The classification for oily rags is currently under review.

TABLE 1 - INDUSTRY SECTOR WASTES

21. WOOD PROCESSING PLANT WASTES

WASTE NAME	WC	PIN	Class	Management
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List to be developed.

**BASEL CONVENTION WASTE MANAGEMENT CODES
RELEVANT TO ALBERTA**

DISPOSAL OPERATIONS

**Section A: OPERATIONS WHICH DO NOT LEAD TO THE POSSIBILITY OF
RESOURCE RECOVERY, RECYCLING, RECLAMATION, DIRECT REUSE
OR ALTERNATE USES**

DISPOSAL CODE	TYPICAL DISPOSAL OPERATIONS
D1	Deposit into or onto land (i.e., approved landfill, etc.).
D2	Land treatment (i.e., biodegradation of liquid or sludgy discards in soils, etc.).
D3	Deep well injection (i.e., injection of waste fluids and pumpable discards into suitable subsurface reservoirs, caverns, salt domes, etc.).
D4	Surface impoundment, such as placing liquids or sludges into pits, ponds or lagoons.
D5	Specially engineered landfill (i.e., placement into lined discrete cells which are capped and isolated from one another and the environment, etc.).
D6	Release into a water body excluding seas/oceans.
D8	Biological treatment which results in final compounds or mixtures which are discarded by means of any of the operations in this section.
D9	Physico-chemical treatment which results in final compounds or mixtures which are discarded by means of any of the operations in this section (i.e., evaporation, drying, calcination, thermal desorption, neutralization, precipitation, solidification, etc.).
D10	Incineration on land: D10.1 High temperature incineration with DRE $\geq$ 99.99% for non-halogenated wastes. D10.2 High temperature Incineration with DRE $\geq$ 99.9999% for halogenated wastes.
D12	Permanent storage, such as emplacement of containers in a mine.
D13	Blending or mixing prior to submission to any of the operations in this section.
D14	Repacking prior to submission to any of the operations in this section.
D15	Storage pending any of the operations in this section.

RECOVERY OPERATIONS

Section B: OPERATIONS WHICH MAY LEAD TO RESOURCE RECOVERY, RECYCLING, RECLAMATION, DIRECT REUSE OR ALTERNATE USES

RECOVERY CODE TYPICAL RECOVERY OPERATIONS

R1	Use as a fuel (other than in direct incineration) or other means to generate energy.
R2	Solvent reclamation/regeneration.
R3	Recycling/reclamation of organic substances that are not used as solvents.
R4	Recycling/reclamation of metals and metal compounds.
R5	Recycling/reclamation of other inorganic compounds.
R7	Recovery of components used for pollution abatement.
R8	Recovery of components from catalysts.
R9	Used oil re-refining or other reuses of previously used oil.
R10	Land treatment resulting in benefit to agriculture or ecological improvement.
R12	Exchange of wastes for submission to any of the operations number R1 through R10.
R13	Accumulation of material intended for any operation in this section.

APPENDIX 2

ALBERTA APPROVED CAPABILITIES

Below are listed companies that hold either Alberta Environmental Protection (AEP) or an Alberta Energy & Utilities Board (formerly Energy Resources Conservation Board) approvals to operate specific waste recycling or management facilities as of January 31, 1996. This information will be updated from time to time as needed to reflect approvals issued, amended or cancelled. Additional information on Alberta's environmental service providers is available from the Environmental Services Association of Alberta @ 1-800-661-9278 or (403) 439-6363.

COMPANY/FACILITY	APPROVAL	MANAGEMENT
Anadime Processing and Disposal Inc. 410, 400 3rd Avenue SW Calgary, AB T2R 1J5 ☎ (403) 245 2451 Stettler: Oilfield Waste Processing Hays: Oilfield Waste Processing	WM 018 (AEUB) WM 025 (AEUB)	R3 R3
BAT Thermal Services Ltd. 2900, 700 9th Avenue S.W. Calgary, AB T2P 4A7 ☎ Mobile Waste Processing/Thermal Desorption	94-IND-078 (AEP)	D10.1
BOVAR Biomedical Services Inc. 701 5th Avenue Beiseker, AB T0M 0G0 ☎ Beiseker: Incineration of Biomedical Waste	93-AL-083C(94) (AEP)	D10
Bromley Marr Ecos 320, 1010 8th Avenue SW Calgary, AB T2P 1J2 ☎ Fox Creek: Oilfield Waste Processing	WM 028(AEUB)	R3
Byram Industrial Services Ltd. P. O. Box 6478 Drayton Valley, AB T0E 0M0 ☎ (403) 542 4733 Northern Oil Separators, Zama Lake: Oilfield Waste Processing/Landfill Pembina Oil Separators, Drayton Valley: Oilfield Waste Processing/Land Treatment	WM 011 (AEUB) WM 010 (ERCB)	R3-D5 R3-D2-D3

COMPANY/FACILITY	APPROVAL	MANAGEMENT
Cambridge Environmental Systems Inc. Suite 4600, 400 4th Avenue SW Calgary, AB T2P 4H2 ☎ (403) 269 2492 Skimmer Oil Separators, Lloydminster: Oilfield Waste Processing	WM 014 (AEUB)	R3-R5
Canadian Chemical Reclaiming Ltd. 610 Prairie Meadow Close Brooks, AB T1R 0C9 ☎ (403) 362 6229 Brooks: Solvent Recycling	93-WL-021/93-AL-048 (AEP)	R2
Canadian Crude Separators Inc. 1750, 521 3rd Avenue SW Calgary, AB T2P 3T3 ☎ (403) 233 7565 Big Valley: Oilfield Waste Processing Incineration Coronation: Oilfield Waste Processing Judy Creek: Oilfield Waste Processing Mitsue: Oilfield Waste Processing/Landfill Swan Hills: Oilfield Waste Processing Valleyview: Oilfield Waste Processing/ Land Treatment	WM 005 (AEUB) 93-AL-026 (AEP) WM 004 (AEUB) WM 009 (AEUB) WM 007 (AEUB) WM 008 (AEUB) WM 006 (AEUB)	R3 D10.1 R3 R3 R3-D5 R3 R3-D2
Canadian Solvent Recovery Ltd. 3825 16A Street SE Calgary, AB T2G 3T4 ☎ (403) 299 0030 Calgary: Solvent Recycling	92-WL-161/92-AL-366 (AEP)	R2
Caswan Environmental Services Ltd. Bay 1, 2916 5th Avenue NE Calgary, AB T2A 6K4 ☎ (403) 235 9333 Mobile Waste Processing/Thermal Desorption	92-AL-364/93-AL-270 (AEP)	D9
Catalyst Recovery Canada Ltd. P. O. Box 1116 Medicine Hat, AB T8A 2A6 ☎ (403) 527 6766 Medicine Hat: Catalyst Regeneration	93-WL-174 (AEP)	R5
CEDA-Reactor Ltd. #200, 6712 Fisher Street SE Calgary, AB T2H 2A7 ☎ (403) 253 3233 Edmonton: Storage & Transfer	92-WL-093 (AEP)	R13-D15

ALBERTA APPROVED CAPABILITIES (Continued)

COMPANY/FACILITY	APPROVAL	MANAGEMENT
Champion Photochemistry Ltd. 1700 Courtney Park Drive Mississauga, ON L5T 1W1 ☛		
Calgary: Storage & Transfer	92-WL-240 (AEP)	R13-D15
Chem-Security (Alberta) Ltd. #4, Manning Close NE Calgary, AB T2E 7N5 ☛ (403) 235 8300		
Calgary: Storage & Transfer	93-WL-105 (AEP)	D15
Nisku: Storage & Transfer	93-WL-122 (AEP)	D15
Swan Hills: Waste Treatment/Incineration Facility	91-WL-036 / 91-AL-063 (AEP) 94-IND-223/94-IND-067 (AEP)	D3-D5-D9-D10
City of Calgary P. O. Box 2100, Station "M" Calgary, AB T2P 2M5 ☛ (403) 230 6617		
Calgary: Storage, Transfer, Blending	92-WL-080 (AEP)	R13-D15
Custom Environmental Services Ltd. 7722 9th Street Edmonton, AB T6P 1L6 ☛ (403) 440 1825		
Edmonton: Storage & Transfer Station	94-IND-007 (AEP)	R13-D15
Cutbank Oil Treatment Facilities Inc. P. O. Box 6623, Edson, AB T7E 1T7 ☛ (403)		
Edson: Oilfield Waste Processing	WM 024 (AEUB)	R3
D.E.B. Caprice Holdings Ltd P. O. Box 6218 Drayton Valley, AB T0E 0M0 ☛ (403) 542 7662		
Caprice Wolf Lake: Oilfield Waste Processing	WM 019 (AEUB)	R3
D.B.S. Environmental (385267 Alberta Ltd.) 1425 33rd Street N Lethbridge, AB T1H 5H1 ☛ (403) 328 4833		
Lethbridge: Storage & Transfer	94-IND-027 (AEP)	R13-D15

COMPANY/FACILITY	APPROVAL	MANAGEMENT
Environmental Abatement Services Inc. Suite 200, 345 Homer Avenue Toronto (Etobicoke) Ont M8W 1S6 ☎ (416) 251 7554 Toronto: Mobile Soil Incineration	94-IND-218 (AEP)	D10.1
E.I.L. Environmental Kiseki Northwest transfer station 16041 132 Avenue Edmonton, AB T5V 1H8 ☎ (403) 448 0866 Onoway: Storage, Transfer, & Fuel Blender	94-IND-192 (AEP)	R9-R13-D15
Environmental Waste Management Ltd. 4086 Ogden Road SE Calgary, AB T2G 4P7 ☎ (403) 720 1007 Calgary: Hazardous Recyclable Storage & Transfer (Used Oil & Solvent Oil Recycler)	94-IND-015 (AEP)	R9
Fimrite Oilfield Services Ltd. R. R. #1 Spirit River, AB T0H 3G0 ☎ (403) 351 3980 Spirit River: Storage & Transfer	92-WL-202 (AEP)	R13
Hazco Environmental Services Ltd. 910, 250 6th Avenue SW Calgary, AB T2P 3H7 ☎ (403) 297 0444 Calgary: Storage & Transfer	93-WL-117 (AEP)	R13-D15
Haz Pro Inc. P.O. Box 1, Site 2, RR5 Calgary, AB T2P 2G6 ☎ (403) 279 8201 Mobile Waste Processing/Thermal Desorption	95-IND-016 (AEP)	D10.1
Hi-Tech Solvents Inc. 1718 7th Avenue NW Calgary, AB T2N 0Z4 ☎ (403) 651 3898 Carstairs: Solvent Recycler	93-WL-068/93-AL-082 (AEP)	R2
Hytec Hydrocarbon Reclamation Ltd. 7011 Ogden Road Calgary, AB T2C 1B5 ☎ (403) 720 2166 Mobile Incineration/Non-Hazardous Waste	94-IND-040 (AEP)	D10.1

ALBERTA APPROVED CAPABILITIES (Continued)

COMPANY/FACILITY	APPROVAL	MANAGEMENT
K-Tec Industries (1993) Inc. P. O. Box 1060 Grande Prairie, AB T2P 3B6 ☎ (403) 538 1855 Mobile Incineration/Non-Hazardous Waste	94-IND-084 (AEP)	D10.1
L.J.R. Refineries Inc. 866B King Edward St. Winnipeg, Man R3H 0P7 ☎ (204) 775-0627 Edmonton: Used oil Processing	to be issued (AEP)	R9
Laidlaw Environmental Services Ltd. 3000, 421 7th Avenue SW Calgary, AB T2P 4K3 ☎ (403) 424 5769 Ryley: Storage, Transfer & Landfill	91-WL-101 (AEP)	R13-D15-D3-D5
Lethbridge Regional Hospital 960 19th Street South Lethbridge, AB T1J 1W5 ☎ (403) 382 6115 Use of Waste Oil as Fuel	93-WL-129/93-AL-185 (AEP)	R1
Maratek Environmental Inc. 14420 116th Avenue Edmonton, AB T5M 4B4 ☎ (403) 730 8300 Edmonton: Photofinishing Waste Recycling	93-WL-184 (AEP)	R3-R4
Medicine River Oil Recyclers Ltd. P. O. Box 58 Eckville, AB T0M 0X0 ☎ (403) 746 3130 Eckville: Oilfield Waste Processing	WM 020 (AEUB)	R3
Natural Options Inc. 1445 44th Avenue SE Calgary, AB T2G 4X4 ☎ (403) 287-9000 Mobile Waste Processing/Incineration	93-AL-100 (AEP)	D10.1
Nelson Environmental Remediation Ltd. 250 2720-12th St. N.E. Calgary AB T2E 7N4 ☎ (403) 940 4026 (Grande Prairie) Mobile Waste Processing/Incineration	94-IND-164 (AEP)	D10.1

COMPANY/FACILITY	APPROVAL	MANAGEMENT
Newalta Corporation 400, 333 11th Avenue SW Calgary, AB T2R 1L9 ☎ (403) 266 6556		
Airdrie: Used Oil Recycling	93-WL-052 (AEP)	R9
Bezanson: Storage & Transfer of Hazardous Recyclables (used oils, contaminated fuels, glycols, and solvents)	94-IND-173 (AEP)	R13-D15
Brooks: Oilfield Waste Processing/Land Treatment	WM 013 (AEUB)	R3-D2-D3
Eckville: Oilfield Waste Processing	WM 003 (AEUB)	R3-D3
Edmonton: Used Oil Recycling	93-WL-046 (AEP)	R9
Gordondale: Oilfield Waste Processing	WM 021	R3
Grande Prairie: Oilfield Waste Processing/ Land Treatment	WM 017	R3-D2-D3
Hughenden: Cavern Disposal	WM 001 (AEUB)	D3
Medicine Hat: Used Oil Recycling	94-IND-043 (AEP)	R2-R3-R4-R9
Raymond: Storage & Transfer of Hazardous Recyclables (used oils, contaminated fuels, glycols, and solvents)	94-IND-174 (AEP)	R13-D15
Red Earth: Oilfield Waste Processing	WM 002 (AEUB)	R3-D3
Strathcona: Used Oil Recycling	94-IND-042 (AEP)	R2-R3-R4-R9
Stauffer: Oilfield Waste Processing	WM 012 (AEUB)	R3
Taber: Oilfield Waste Processing	WM 022 (AEUB)	R3
Pat's Offroad Transport Ltd. P. O. Box 326 Medicine Hat, AB T1A 7G1 ☎ (403) 527 4774		
Medicine Hat: Hazardous Recyclables Storage & Transfer	93-WL-193 (AEP)	R13
Phillip Environmental Services Ltd. P. O. Box 242 Nisku, AB T0C 2G0 ☎ (403) 250 3225		
Nisku: Storage & Transfer	93-WL-055 (AEP)	R13-D15
R.D.B Environmental Services Inc. Site 14, Box 43, RR 1 Blindman Industrial Park Red Deer AB T4N 5E1 ☎ (403) 342 7823		
Red Deer: Storage & Transfer	95-IND-011 (AEP)	R13-D15
Safety-Kleen Canada Inc. 3816 7th Street SE Calgary, AB T2G 2G4 ☎ (403) 949 2435		
Calgary: Storage & Transfer	93-WL-169 (AEP)	R13-D15
Nisku: Storage & Transfer	94-IND-020 (AEP)	R13

ALBERTA APPROVED CAPABILITIES (continued)

COMPANY/FACILITY	APPROVAL	MANAGEMENT
Smithbrook Waste Management Systems Inc. P. O. Box 1360 Brooks, AB T1R 1C3 ☎ (403) 362 4071 Brooks: Storage & Transfer	93-WL-062 (AEP)	R13
Sure Start Auto Electric P. O. Box 5027 Peace River, AB T8S 1R7 ☎ (403) 332 4229 Peace River: Storage & Transfer (batteries)	92-WL-012 (AEP)	R13-D15
The Recycle Systems Company Inc. P. O. Box 393 Nisku, AB T0C 2G0 ☎ (403) 955-2508 Nisku: Metal & CFCs Recovery (Aerosols)	92-AL-141 & 93-AL-240 (AEP)	R3-R4
The University of Calgary 2500 University Drive Calgary, AB T2N 1N4 ☎ (403) 220-6345 Calgary: Storage & Transfer	93-WL-183 (AEP)	R13-D15
TriWaste CleanCare Inc. 9611 44 Street SE Calgary, AB T2P 2G6 ☎ (403) 236 2207 Big Valley: Waste Processing Calgary: Storage & Transfer Raymond: Storage & Transfer	93-AL-132/93-WL-103 (AEP) 92-WL-159 (AEP) 93-AL-264(AEP)	D9 R13-D15 R13-D15
TriWaste Technisol Inc. P. O. Box 1268 Lethbridge, AB T1J 4K1 ☎ (403) 752 3213 Raymond: Solvent Recycling	93-AL-264/93-WL-170 (AEP)	R2
TriWaste Treatment Services Inc. 1700, 800 5th Avenue SW Calgary, AB T2P 3T6 ☎ (403) 261 7888 Redwater: Hazardous Waste Treatment Plant	94-IND-155 (AEP)	D9-D15-R3-R13
Umatac Industrial Processes 210, 2880 Glenmore Trail SE Calgary, AB T2C 2E7 ☎ (403) 279-8080 Calgary: Waste Processor/Thermal	92-WL-245 (AEP)	D10

ALBERTA APPROVED CAPABILITIES (Continued)

COMPANY/FACILITY	APPROVAL	MANAGEMENT
Westinghouse Canada Inc. P. O. Box 3730 Airdrie, AB T4B 2B9 ☎ (403) 948-7955 Airdrie: CFCs Recovery	92-WE-001 (AEP)	R3
Wild Rose Recycling Inc. P. O. Box 6628 Wetaskiwin, AB T9A 2G3 ☎ (403) 352-4258 Wetaskiwin: Lead Acid Battery Recycler	95-IND-032 (AEP)	R4

APPENDIX 3

GENERIC WASTE CATEGORIES

Explanatory notes to Table 2:

1. V stands for variable. More than one product identification number (PIN) or one class may be applicable to that particular waste.
 2. NR means that the waste is not regulated as hazardous waste and as such it is not subject to the provisions of Part 9, Division 3 of the Environmental Protection and Enhancement Act and Part 1 of the Waste Control Regulation.
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WASTE TYPE/NAME	WC	PIN	Class	Management
INORGANIC				
<u>Acid Solutions</u>				
Spent pickle liquor	111	NA9380	8	D9-R7
Acid solutions of sulphuric and hydrochloric acids containing ferrous salts from steel finishing operations (WT 81).				
Acid solutions, sludges and residues containing heavy metals	112	UN1760	8-9.3	D9-D3
Solutions of sulphuric, hydrochloric and nitric acids containing copper, nickel, chromium, zinc, cadmium, tin, lead or other heavy metals; chromic acid waste; acidic emission control sludges from secondary lead smelting; equipment acid washings.				
Acid solutions, sludges and residues containing other metals and non-metals	113	UN1760	8	D9
Solutions of sulphuric, hydrochloric, hydrofluoric & nitric acids containing sodium, potassium, calcium, magnesium or aluminum; cation regenerant; reactor acid wastes; catalyst acid and acid washes.				
Other inorganic acid wastes	114	UN1760	8	D9
Off-spec acids; by-product hydrochloric acid; dilute acid solutions; acid test residues.				

Generic Waste Categories (continued)

WASTE TYPE/NAME	WC	PIN	Class	Management
<u>Alkaline Solutions</u>				
Alkaline solutions, sludges and residues containing heavy metals	121	UN1760	8-9.3	D9-D3
Metal finishing wastes; plating baths; spent solutions containing metals such as copper, zinc, tin, & cadmium; case hardening sludges; spent cyanide destruction residues; dewatered solids from metal and cyanide finishing wastes and cyanide destruction; caustic sour process wastewater; equipment alkali washings.				
Alkaline solutions, sludges and residues containing other metals and non-metals not containing cyanides	122	UN1760	8	D9-D3-R7
Alkaline solutions from aluminum surface coating and etching; alkali cleaner wastes; anion regenerants.				
Wastes consisting of or containing calcium oxide, calcium hydroxide, calcium carbonate, lime kiln dust, lime treated sludge, or other lime treated wastes, which have a high pH but which are not otherwise hazardous.				
			NR	R7-R10-D1-D5
Wood ash from boilers, burners, incinerators.				
			NR	R7-R10-D1-D5
Alkaline phosphates	123			
Bonderizing wastes; zinc phosphates; ferrous phosphates; phosphate cleaners.				
<u>Aqueous Salts</u>				
Neutralized solutions, sludges and residues containing heavy metals	131	NA9500	9.3	D3-D9
Metal finishing waste treatment sludges containing copper, nickel, chromium, zinc or cadmium; neutral salt bath sludges & washes; lime sludge from metal finishing waste treatment; dewatered solids from these processes; corrosion inhibitor solutions; ion exchange resins regenerant.				

Generic Waste Categories (continued)

WASTE TYPE/NAME	WC	PEN	Class	Management
Neutralized solutions, sludges and residues containing other metals	132			
Aluminum surface coating treatment sludges (WT 7)		NA9307	6.1	D3-D9
Alum and gypsum sludges		-	NR	D9-D5
Brines, sludges, and residues from chlor-alkali plants	133	NA9390	9.3	D9-D5-D3
Waste brines from chlor-alkali plants; neutralized hydrochloric acid; brine treatment sludges; dewatered solids from brine treatment.				
Wastes containing sulphides	134			
Wastes containing other reactive anions	135			
Wastes containing chlorates, hypochlorite, bromate or thiosulphate				
Produced water and similar brines	136	-	NR	D3
<u>Miscellaneous Inorganic Wastes and Mixed Wastes</u>				
Inorganic wastes from pigment manufacturing	141	NA9500	9.3	D9-D3
Wastewaters, sludges and dewatered solids from the production of chrome yellow, molybdate orange, zinc yellow, chrome green and iron pigments				
Primary lead, zinc and copper smelting wastes	142	NA9500	9.3	D9-D3-D5-D1
Pond sediments, slurries, and sludges; treatment plant sludges; anode slimes and leachate residues; dewatered solids from these sources				
Residues from steel making	143			
Emission control sludges and dusts; precipitator residues from steel plants; dewatered solids from these sources				
Liquid tannery waste sludges	144	NA9500	9.3	D9-D3-D5
Lime waste mixtures; chrome tan liquors; dehairing solutions and sludges				

Generic Waste Categories (continued)

WASTE TYPE/NAME	WC	PIN	Class	Management
Wastes from the use of paints, pigments and coatings	145			
Paint spray booth sludges and wastes; paper coating wastes; ink sludges; paint sludges				
Spent shot blasting waste resulting from the removal of paint from metal surfaces (WT 205)		NA9500	9.3	R5-D9-D5
Other specified inorganic sludge, slurries or solids	146			
Flue gas scrubber wastes; wet fly ash; dust collector wastes; metal dust and abrasives wastes; foundry sands; mud sediment and water; tank bottoms from waste storage tanks that contained mixed inorganic wastes; heavy sludges from waste screening/filtration at transfer/processing sites not otherwise specified in this table.				
Produced sand (oil & gas exploration)		-	NR	R5-D1-D3-D5
Chemical fertilizer wastes	147			
Solutions, sludges and residues containing ammonia, urea, nitrates, and phosphate from nitrogen fertilizer plants				
Phosphogypsum sludges		-	NR	R5-D1-D12-D15
Miscellaneous waste inorganic chemicals	148			
Waste inorganic chemicals including laboratory surplus or off-specification chemicals, that are not otherwise specified in this table.				
Landfill leachate	149			
Leachate collected from landfill sites				
Inert inorganic wastes	150			
Asbestos	150	UN2212	9.1	D9-D1-D5-D8
Sump waste from car wash bays		-	NR	D9-D1-D5-D8
Slurries from the polishing and cutting of marble		-	NR	D9-D1-D5
Furnace refractory		-	NR	R5-D1-D5
Ceramic support material		-	NR	R5-D1-D5

Generic Waste Categories (continued)

WASTE TYPE/NAME	WC	PIN	Class	Management
Batteries	151			
Wet batteries filled with acid		UN2794	8	R4-D9-R5
Wet batteries filled with alkali		UN2795	8	R4-D9-R5
Dry batteries containing KOH (Ni-Cd)		UN3028	8	R4-D5
Lithium batteries (Li-SOCl ₂)		UN3090	9.1	R4-D9-R5
Empty packages, bags, & containers	152	V	V	R3-R4-D1-D5
Fluorescent lamps (mercury & sodium)	153	-	NR	D9-D1
ORGANIC WASTES				
<u>Non-halogenated spent solvents</u>				
Aromatic solvents and residues	211			
Benzenes, toluene, ethyl benzene, xylene solvents and residues		UN1993	3-9.3	R2-D10.1
Aliphatic solvents and residues	212			
Acetone, methyl ethyl ketone and residues, alcohols, cyclohexane and residues		UN1993	3-9.3	R2-D10.1
Petroleum distillates	213			
White spirits and petroleum distillates, thinners		UN1268	3	R2-D10.1
Petroleum aqueous refinery condensates		UN1268	3	D9-R2-R3-D3
Varsol		-	NR	R1-R2-D10.1
Fuels	221			
Gasoline, kerosene, and associated tank drainage/washings/bottoms and spill clean-up residues		UN1863	3..1/3.2	R1-R3-D10.1
Fuel oil No. 1, 2, 4, or 5		UN1202	3.2	R1-R3-D10.1
Fuel oil No. 6, bunker oil, and associated tank drainings/washings/bottoms, and spill clean-up residues				
<u>Resins and Plastics</u>				
Latex wastes	231			
Waste latexes, latex crumb and residues				

Generic Waste Categories (continued)

WASTE TYPE/NAME	WC	PIN	Class	Management
Polymeric resins	232			
Polyester, epoxy, urethane, phenolic resins, intermediates and solvent mixtures				
Other polymeric wastes	233			
Off-specification materials, discarded materials from reactors				
<u>Halogenated Organic Wastes</u>				
Halogenated solvents and residues	241			
Spent halogenated solvents and residues such as tetrachloroethylene, trichloroethylene, and carbon tetrachloride (drycleaning solvents); halogenated still bottoms; residues and catalysts from halogenated hydrocarbon manufacturing or recycling processes		NA9302	3-6.1-9.3	R2-D9-D10.2
Halogenated pesticides and herbicides	242			
2,4-D; 2,4,5-T wastes, chlordane, mirex, silvex, pesticide solutions and residues		UN2996	6.1-9.3	D9-D10.2
Polychlorinated biphenyls	243			
Askarel liquids such as Aroclor, Pydraul, Pyranol, Therminols, Inerteen, and other PCB containing liquids		UN2315	9.1	D9-D10.2
PCBs contaminated solids (PCBs _≥ 1000 ppm)		UN2315	9.1	D9-D10.2
PCB contaminated solids (PCBs _≥ 50 ppm and PCBs _≤ 1000 ppm)		UN2315	9.1	D5-D9-D10.2
Fluorescent light PCB ballasts		UN2315	9.1	D9-D10.2
<u>Oily Wastes</u>				
Waste oils/sludges (petroleum based)	251	V	3	R1-R3-D2-D9-D10.1
Oil/water separator sludge; dissolved air flotation skimming; heavy oil tank drainage; slop oil and emulsions				

Generic Waste Categories (Continued)

WASTE TYPE/NAME	WC	PIN	Class	Management
Waste crankcase oils and lubricants	252			
Collected service station waste oils; industrial lubricants; bulk waste oils		NA9500	9.3	R1-R9
Emulsified oils	253			
Soluble oils, cutting oils, machine oils		NA9500	9.3	R1-R9-D10.1
Oily water/waste oil from waste transfer/processing sites	254			
Waste oil and oily water limited to class 251-253 that have been bulked/blended/processed at waste transfer sites		NA9500	9.3	R1-R9-D10.1
<u>Miscellaneous Organic Wastes and Mixed Wastes</u>				
Pharmaceuticals	261			
Pharmaceutical and veterinary pharmaceutical wastes other than biologicals and vaccines; solid residues and liquids from veterinary arsenical compounds				
Detergents and soaps	262			
Laundry wastes			NR	D8
Miscellaneous organic chemicals	263			
Waste organic chemicals including laboratory surplus or off-specification chemicals that are not otherwise specified in this table				
Photoprocessing wastes	264			
Photochemical solutions, washes and sludges		NA9500	9.3	R4-D8-D9
Graphic arts wastes	265			
Adhesives; glues; miscellaneous washes; etch solutions				
Phenolic waste streams	266			
Cresylic acid; caustic phenolates; phenolic oils; creosote		UN2821	6.1-9.3	D3-D9-D10

Generic Waste Categories (Continued)

WASTE TYPE/NAME	WC	PIN	Class	Management
Organic acids	267			
Carboxylic or fatty acids; formic, acetic, propionic acid wastes; sulphamic and other organic acids		UN1760	8	D8-D10.1
Amines	268	NA9500	9.3	D3
Waste ethanolamines; urea; tolidene; flexzone waste; monex waste				
Filter backwash liquids from gas sweetening (MEA, DEA, and sulphinol)				
Organic non-halogenated pesticides and herbicide wastes	269			
Organophosphorus chemical wastes; arsenicals; wastes from MSMA and cacodylic acid				
Other specified organic sludges, slurries and solids	270			
Tank bottoms from mixed organic waste bulk-ing tanks at waste transfer sites; mixed sludges from waste screening/filtration at waste transfer/processing sites not otherwise specified				
Activated carbon	271	NA9500	9.3	R1-R3-R7-D5-D9-D10
Activated carbon with leachable toxics				
Drilling muds including fresh water gel bentonite, salt water (Na and K), oil invert and variations thereof	272	-	NR	D1-D2-D3-D5-D9-D10.1
Glycol solutions	273			
Spent glycol solutions from cooling systems containing lead (WT 202)		NA9434	9.3	R3-D3-D8
Spent glycol solutions not containing lead		-	NR	R3-D3-D8
Sorbent materials	274			
Rags and sorbent materials		V	V	R3-D1-D5-D9-D10.1
Treater hay		NA9398	3	R10-D10.1

NOTE : The classification for oily rags is currently under review.

Generic Waste Categories (continued)

WASTE TYPE/NAME	WC	PIN	Class	Management
Used filters	275			
From gas sweetening & dehydration including MEA, DEA, sulphinol, & glycol solutions		UN1325	4.1	D5-D9-D10.1
From produced water		UN1325	4.1	D1-D5-D9-D10.1
Oil filters from internal combustion engines		NA9500	9.3	R3-R5-D9-D5
<u>Plant and Animal Wastes</u>				
Organic tannery wastes	311			
Fleshings; trimmings; vegetable tan liquors; bate solutions				
Biomedical/Pathological wastes	312			
Human anatomical waste		UN2814	6.2	D9-D10
Infected animal carcasses		UN2814	6.2	D9-D10
Non-anatomical waste infected with communicable diseases		UN2900	6.2	D9-D10
Biologicals and vaccines		UN2900	6.2	D9-D10
<u>Explosive manufacturing wastes</u>				
Wastes from the manufacture of explosives and detonation products	321			
Wastewater treatment sludges				
Spent carbon				
Red/pink waters from TNT manufacturing				
Residues from lead base initiating compounds				
<u>Compressed gases</u>				
Waste compressed gases including cylinders	331			
Methane (natural gas), propane and butane				
Nitrous or nitric oxide				